

REMARKS

This supplemental preliminary amendment is submitted prior to substantive examination of this continuation application for the purpose of adding new claims 55-77 which pertain to micromechanical devices in which a suspended structure is recessed relative to a carrier. The drawings of Figures 9A-11 generally depict such micromechanical devices. This supplemental preliminary amendment is submitted for the additional purpose of canceling claims 1-54 which were submitted in the course of the prosecution of the parent patent application from which this continuation application claims priority. Thus, this preliminary amendment is submitted in order to properly focus the examination on a new set of claims that are different from the claims examined in the parent application.

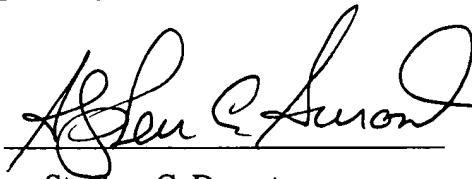
Applicant respectfully requests examination, allowance and passage to issue of the new claims 55-77.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version With Markings to Show Changes Made**".

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that other relief is required, applicant petitions for any required relief including extensions of time and authorizes the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing Docket No. 356952000304. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

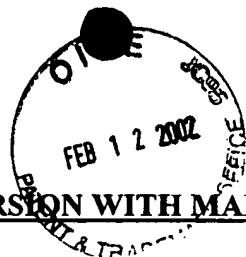
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Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

- 55. (New) A semiconductor micromechanical device comprising:
- a first single crystal silicon wafer layer;
 - a single crystal silicon structure formed in said first wafer layer and including two oppositely disposed substantially vertical major surfaces and including two oppositely disposed generally horizontal minor surfaces wherein the aspect ratio of major surface to minor surface is at least 5:1; and
 - a carrier secured to said first wafer layer;
- wherein said structure is recessed relative to the carrier such that said structure is suspended opposite the carrier. --
- 56. (New) The micromechanical device of claim 55,
- wherein said carrier includes a silicon wafer layer; and
 - wherein said first layer and said carrier are fusion bonded together. --
- 57. (New) The micromechanical device of claim 55 wherein said first layer is formed of (100) oriented silicon crystal. --
- 58. (New) The micromechanical device of claim 55 wherein the aspect ratio of major surface to minor surface is at least 20:1. --
- 59. (New) The micromechanical device of claim 55 wherein said structure is a beam secured at only one end thereof to said first wafer layer. --
- 60. (New) The micromechanical device of claim 55 wherein said structure is a beam secured at one end thereof to said first wafer layer and including a seismic mass at the other end thereof. --

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-- 61. (New) The micromechanical device of claim 55 wherein said structure is a beam secured at one end thereof to said first wafer layer and including an electronic circuit formed in the other end thereof. --

-- 62. (New) The micromechanical device of claim 55,
wherein said first layer is formed of (100) oriented silicon crystal; and
wherein said structure is a beam secured at one end thereof to said first wafer layer and including an electronic circuit formed in the other end thereof. --

-- 63. (New) The micromechanical device of claim 55 wherein said structure is a beam secured at one end thereof to said first wafer layer and including a plurality of vertical plates formed in the other end thereof. --

-- 64. (New) The micromechanical device of claim 55,
wherein said structure is a beam secured at one end thereof to said first wafer layer and including a plurality of vertical plates formed in the other end thereof, and
wherein said vertical plates have an aspect ratio of at least 10:1. --

-- 65. (New) The micromechanical device of claim 55,
wherein said structure is a beam secured at one end thereof to said first wafer layer and including a plurality of vertical plates formed in the other end thereof and
further including an electronic circuit formed in the other end thereof. --

-- 66. (New) The micromechanical device of claim 55,
wherein said first layer is formed of (100) oriented silicon crystal; and
wherein said structure is a beam secured at one end thereof to said first wafer layer and including a plurality of vertical plates formed in the other end thereof and
further including an electronic circuit formed in the other end thereof. --

-- 67. (New) The micromechanical device of claim 55,
wherein said first layer is formed of (100) oriented silicon crystal;

wherein said structure is a beam secured at one end thereof to said first wafer layer and including a plurality of vertical plates formed in the other end thereof and further including an electronic circuit formed in the other end thereof, and
wherein said vertical plates have an aspect ratio of at least 10:1. --

-- 68. (New) The micromechanical device of claim 55 wherein said structure is a beam secured at both ends thereof to said first wafer layer. --

-- 69. (New) The micromechanical device of claim 55 wherein said structure is a plate secured at only one end thereof to said first wafer layer. --

-- 70. (New) A semiconductor micromechanical device produced by the steps of:

providing a first single crystal silicon wafer layer including a recessed region;

providing a carrier;

securing the first wafer layer to the carrier with the recessed region facing the carrier; and

etching substantially vertically through the first wafer layer near the recessed region so as to form a beam integral with the first wafer layer and suspended over the carrier wherein the beam has an aspect ratio of height to width of at least 5:1. --

-- 71. (New) The micromechanical device of claim 70 wherein the step of etching includes reactive ion etching. --

-- 72. (New) The micromechanical device of claim 70 wherein the step of providing the first wafer layer includes providing a single crystal (100) oriented silicon wafer layer. --

-- 73. (New) The micromechanical device of claim 70 wherein the step of etching includes etching substantially vertically through the first wafer layer near the recessed region so as to form multiple beams integral with the first wafer layer and

suspended over the recessed region wherein each beam has an aspect ratio of height to width of at least 10:1. --

-- 74.(New) A semiconductor micromechanical device produced by the steps of:

providing a first single crystal silicon wafer layer including a recessed region;
providing a carrier;

fusion bonding the first wafer layer to the carrier with the recessed region facing the carrier; and

etching substantially vertically through the first wafer layer near the recessed region so as to form a plate integral with the first wafer layer and suspended over the carrier wherein the plate has an aspect ratio of height to width of at least 5:1. --

-- 75. (New) The micromechanical device of claim 74 wherein the step of etching includes reactive ion etching. --

-- 76.(New) The micromechanical device of claim 74 wherein the step of providing the first wafer layer includes providing a single crystal (100) oriented silicon wafer layer. --

-- 77.(New) The micromechanical device of claim 74 wherein the step of etching includes etching substantially vertically through the first wafer layer near the recessed region so as to form multiple plates integrated with the first wafer layer and suspended over the carrier wherein each plate has an aspect ratio of height to width of at least 10:1. --